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| KRAMER LEVIN NAFTALIS & FRANKEL LLP INTELLECTUAL PROPERTY DEPARTMENT 919 THIRD AVENUE NEW YORK, NY 10022 | | | KIM, DAVID S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2633 | |

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/061,041

Applicant(s)

MECKLER, MILTON

Examiner

David S. Kim

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

However, the provisional application (**60/264,960**, filed on 30 January 2001) upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for **claims 12-13 and 18** of this nonprovisional application. Regarding claims 12, provisional application 60/264,960 does not discuss detecting a data rate of a communications signal and routing said communications signal to one of a plurality of communications systems based upon said rate. Regarding claims 13, provisional application 60/264,960 does not discuss a computer system translating a protocol of said communications signal to correspond to a protocol of the communications system to which said communications signal is routed.

Regarding claims 18, provisional application 60/264,960 does not discuss an optical interleaver. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the provisional application (**60/276,226**, filed on 15 March 2001) upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for **claims 12-13** of this nonprovisional application. Regarding claims 12, provisional application 60/276,226 does not discuss detecting a data rate of a communications signal and routing said communications signal to one of a plurality of communications systems based upon said rate. Regarding claims 13, provisional application 60/276,226 does not discuss a computer system translating a protocol of said communications signal to correspond to a protocol of the communications system to which said communications signal is routed.

Art Unit: 2633

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following limitations must be shown or the feature(s) canceled from the claim(s):

(claims 1-13) first holographic communications server and second holographic communications server,

(claim 18) an optical interleaver *located downstream* of one of said holographic multiplexer and said holographic demultiplexer.

No new matter should be entered.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

The section "BRIEF SUMMARY OF THE INVENTION" is missing.

Art Unit: 2633

Appropriate correction is required.

6. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

7. **Claim 11** is objected to because of the following informalities:

In claim 11, "a computer system for coupled" is used where -- a computer system coupled -- may be intended.

Appropriate correction is required.

Art Unit: 2633

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Steensma

9. **Claim 1** is rejected under 35 U.S.C. 102(b) as being anticipated by Steensma (U.S. Patent No. 4,062,618).

Regarding claim 1, Steensma discloses:

A communications system comprising:

a first holographic communications server (holographic system 1 serving sources 2-4 in Figs. 1-2);

a first holographic multiplexer/demultiplexer (hologram 21 in Fig. 3), coupled to said first holographic communications server;

a second holographic communications server (array of photosensors 7 in Figs. 1-2 serving destinations (not shown) of intelligence signals S_1 - S_N); and

a second holographic multiplexer/demultiplexer (hologram photographic plate 6 in Figs. 1-2), coupled to said second holographic communications server; and

wherein the first and second multiplexer/demultiplexers are coupled by an optical communications link (optical waveguide 5).

Art Unit: 2633

Morozov

10. **Claim 18** is rejected under 35 U.S.C. 102(e) as being anticipated by Morozov (U.S. Patent No. 6,345,133 B1).

Regarding claim 18, Morozov discloses:

A communications system comprising:

a holographic multiplexer (holographic grating 505 in Fig. 5);

a holographic demultiplexer (holographic grating 501); and

an optical interleaver (switches in array 503 in Fig. 5 with the embodiment of Fig. 4; note that the switch in Fig. 4 interleaves wavelengths) located downstream of one of said holographic multiplexer and said holographic demultiplexer for separating (switch in Fig. 4 also separates wavelengths entering upper input port into the two output ports) laser beam wavelengths.

Cao et al.

11. **Claim 18** is rejected under 35 U.S.C. 102(e) as being anticipated by Cao et al. (U.S. Patent No. 6,778,780 B1).

Regarding claim 18, Cao et al. discloses:

A communications system comprising:

a holographic multiplexer (channel separator 700a in Fig. 8);

a holographic demultiplexer (channel separator 700b); and

an optical interleaver (interleaved channel separator 802) located downstream of one of said holographic multiplexer and said holographic demultiplexer for separating laser beam wavelengths.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claims 1-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kintis et al. (U.S. Patent No. 5,661,582, hereinafter "Kintis") in view of Abate et al. (U.S. Patent No. 6,411,414 B1, hereinafter "Abate") and Arns et al. ("Volume phase gratings for spectroscopy, ultrafast laser compressors, and wavelength division multiplexing," hereinafter "Arns").

Regarding claim 1, Kintis discloses:

A communications system comprising:

a first communications server (distribution module 32 in Fig. 1 serving user(s));

a second communications server (server (not shown) at the location of ground based optical uplink 24 serving user(s));

wherein the first and second servers are coupled by an optical communications link (optical signals between satellite 12 and uplink 24).

Kintis does not expressly disclose:

said first communications server being a first *holographic* communications server;

a first holographic multiplexer/demultiplexer, coupled to said first holographic communications server;

said second communications server being a second *holographic* communications server;

a second holographic multiplexer/demultiplexer, coupled to said second holographic communications server; and

wherein the first and second *multiplexers/demultiplexers* are coupled by the optical communications link.

However, note that the system of Kintis employs optical signals that pass through free space (the atmosphere and outer space in Fig. 1). Abate also discloses a communication system that employs optical signals that pass through free space (abstract). Abate further teaches the use of first and second multiplexers/demultiplexers coupled by an optical communications link. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to couple said first and second communications servers to the first and second multiplexers/demultiplexers of Abate, respectively. One of ordinary skill in the art would have been motivated to do this since Kintis appears to show only the propagation of optical signals of a single wavelength along the optical communications link (col. 4, l. 45-62), limiting the communication bandwidth of the optical communications link to that of a single wavelength. That is, Abate's teachings enable an increase in the communication bandwidth by sending optical signals of multiple wavelengths along an optical communications link (col. 2, l. 52-55).

Together, Kintis in view of Abate still does not expressly disclose:

A communications system comprising:

said first communications server being a first *holographic* communications server;

a first *holographic* multiplexer/demultiplexer, coupled to said first *holographic* communications server;

said second communications server being a second *holographic* communications server;

and

a second *holographic* multiplexer/demultiplexer, coupled to said second *holographic* communications server.

Art Unit: 2633

However, holographic technology is a well-developed field in the art. Arns teaches holographic multiplexers/demultiplexers for use in communication systems (p. 9-10). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to employ the holographic gratings for the multiplexers/demultiplexers of Kintis in view of Abate. One of ordinary skill in the art would have been motivated to do this since the holographic multiplexers/demultiplexers of Arns provide the general WDM function (Arns, p. 9, middle paragraph) employed by Abate and since Abate teaches the use of gratings for the multiplexers/demultiplexers (Abate, col. 4, l. 15-23). Accordingly, as the communications servers interface with the *holographic* multiplexers/demultiplexers, they would comprise *holographic* communications servers.

Regarding claims 2-11, claims 2-11 introduce limitations that Kintis in view of Abate and Arns are well known applications of satellite communications (Kintis, Fig. 1):

The system according to claim 1 further comprising the following coupled to said second holographic communications server:

- (claim 2) a plurality of mobile communications devices (e.g., cell phones), or
- (claim 3) a plurality of fixed communications devices (e.g., televisions), or
- (claim 4) a radio frequency communications device (e.g., cell phone towers); and
- a plurality of mobile communications devices (e.g., cell phones) coupled to said radio frequency communications device, or
- (claims 5-6) a radio frequency communications server (e.g., cell phone tower), wherein said radio frequency communications servers comprises a radio transmitter and antenna (i.e., cell phone towers conventionally have radio transmitters and antennas), or
- (claim 7) a satellite communications server (e.g., links to satellite television networks), or
- (claim 8) a fiber optic communications server (e.g., broadband optical networks), or
- (claim 9) a terrestrial communications server (e.g., Kintis, ground based station 24), or

Art Unit: 2633

(claim 10) a global positioning satellite (GPS) communications device (e.g., military GPS devices or GPS devices in commercial vehicles), or

(claim 11) a computer system (e.g., computers in telecommunication networks).

Regarding claim 12, Kintis in view of Abate and Arns does not expressly disclose:

The system according to claim 11 wherein said computer system detects a data rate of a communications signal and routes said communications signal to one of a plurality of communications systems based on said data rate.

However, such detecting and routing is known in the art. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to perform such detecting and routing in the system of Kintis in view of Abate and Arns. One of ordinary skill in the art would have been motivated to do this since various communications signals can be characterized and even identified by their respective data rates. Such characterization and identification can help ensure that these signals are routed to their proper destinations.

Regarding claim 13, Kintis in view of Abate and Arns does not expressly disclose:

The system according to claim 12 wherein said computer system translates a protocol of said communications signal to correspond to a protocol of the communications system to which said communications signal is routed.

However, such translating is conventional in the art. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to perform such translating in the system of Kintis in view of Abate and Arns. One of ordinary skill in the art would have been motivated to do this since protocols are like the digital analogue to human language. That is, without such translating, the destination communications system would not understand the incoming communications signal.

Regarding claim 14, Kintis in view of Abate and Arns discloses:

Art Unit: 2633

A space to space, land to land and space to land long distance communications system comprising:

space based (Kintis, satellite 12 in Fig. 1) receiving and transmitting means for receiving and transmitting a communication signal; and

land based (Kintis, ground based station 24) receiving and transmitting means for receiving and transmitting said communications signal;

wherein said spaced based receiving and transmitting means communicates with said land based receiving and transmitting means by wireless laser beams (Abate, abstract) utilizing a holographic multiplexer (Arns, p. 9) and a holographic demultiplexer (Arns, p. 9).

Regarding claim 15, Kintis in view of Abate and Arns discloses:

A mobile communications apparatus comprising:

a transmitter/receiver (Kintis, satellite 12, ground based station 24 in Fig. 1), and

at least one of a holographic multiplexer (Arns, p. 9) and a holographic demultiplexer (Arns, p. 9), coupled to said transmitter/receiver.

Regarding claim 16, Kintis in view of Abate and Arns discloses:

The apparatus of claim 15 further comprising a power source coupled to said transmitter/receiver (both the satellite 12 and ground based station 24 of Kintis inherently require a power source to operate).

Regarding claim 17, Kintis in view of Abate and Arns does not expressly disclose:

The apparatus of claim 16 wherein said power source comprises a solar panel.

However, it is well known that satellites are conventionally powered by solar panels. Additionally, solar panels comprise an advantageous power source for ground-based stations since solar energy is a clean and abundant source of energy, particularly in contrast to other standard energy sources such as oil, coal, or nuclear reactions.

Art Unit: 2633

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DSK

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